

We Claim

1. A blade cooling arrangement comprising a blade tip including a coolant gallery in use upstream of flow entrainment means, the gallery including release passages to release coolant in use close to the blade tip surface whilst the flow entrainment means entrains that released coolant to facilitate flow isolation from turbulent air created by a shroud or leading edge of the blade tip.
2. An arrangement as claimed in claim 1 wherein the gallery includes a cavity from which the release passages extend.
3. An arrangement as claimed in claim 1 wherein the release passages extend laterally towards the flow entrainment means.
4. An arrangement as claimed in claim 1, wherein the release passages have a slight downward inclination towards the flow entrainment means and in use project the coolant flow in that slight downward inclination.
5. An arrangement as claimed in claim 1 wherein the flow entrainment means comprises upstanding fins to form channels for entrainment of the coolant flow.
6. An arrangement as claimed in claim 5 wherein the fins extend above the height of the release passages.
7. An arrangement as claimed in claim 5 wherein the fins are substantially perpendicular to the blade tip surface.
8. An arrangement as claimed in any of claims 5, 6 or 7 wherein each fin has substantially the same height.
9. An arrangement as claimed in claim 5 wherein the fins have different heights and/or shapes and/or presentational angles relative to the respective release passages for specific coolant entrainment as required for a particular part of the blade tip dependent upon desired cooling efficiency and/or blade structural integrity.

- 11
10. An arrangement as claimed in claim 5 wherein
the fins provide additional contact surface area for
enhanced heat transfer to the coolant air flow.
11. An arrangement as claimed in any claim 1 wherein the
5 flow entrainment means define channels through which the
coolant flow is driven in use by rotation of the blade tip.
12. An arrangement as claimed in claim 1 wherein the blade
tip includes one of ripple strips, trip strips and other
heat transfer augmentation features to improve heat transfer
10 between the coolant air flow and the blade tip.